

A HIGH-SATURATION THIN-FILM WRITE HEAD FOR HIGH-COERCIVITY MAGNETIC DATA STORAGE MEDIA

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ABSTRACT OF THE DISCLOSURE

A thin-film write head employing pole pieces formed of an electroplated body-centered cubic (BCC) nickel-iron alloy with a saturation flux density (B_S) of 1.9 to 2.3 T (19 to 23 kG) and an acceptable coercivity (H_C) of about 80 to about 160 A/m (1-2 Oe). The iron content of the electroplated nickel-iron alloy is from 64% to 10 81% by weight. The two-layer pole fabrication process holds magnetic anisotropy and coercivity to useable values while improving saturation flux density and optimizing magnetostriction. This is accomplished by first electroplating a BCC nickel-iron layer onto an underlying seed layer and then annealing the two layers to reduce coercivity to less than about 160 amps/meter and raise magnetization to 15 acceptable levels.